Practicing On Purpose: Companion Notes

Road Map

The presentation follows this sequence:

• Biopsychosocial Approach
• Pain as Perception
• Signal vs. Noise: Making Sense of the Story
• Signal vs. Noise: Making Sense of the Exam
• Words that Heal (or Harm)
• Manual Therapy Reframed
• Treatment Planning
• Integration and Application: Practicing on Purpose

Biopsychosocial Model

Health and illness are shaped by the dynamic interaction of biological, psychological and social factors. Pain cannot be fully understood by focusing only on tissue pathology; mental health, beliefs, culture, life stressors and social supports all influence the pain experience.

Key points:

• Physical injury, genetics, cognitive factors, cultural/spiritual identity, environmental stressors and functional or social disability all influence pain.
• Two people with the same pain intensity (e.g., 8/10) may have very different contributing factors.
• Treatment should address the whole person rather than just the painful body part.

Case Example: Jane

Jane is a 67-year-old woman who developed chronic neck pain after a motor vehicle accident in 2012. Her neck pain radiates to her shoulders and mid back. Imaging shows only mild degenerative changes. Her husband died in the accident, leading to grief, panic attacks, isolation and guilt. She no longer drives, eats irregularly, sleeps poorly and has lost her religious community. The case illustrates how trauma and psychosocial factors can exacerbate persistent pain.

Key message: *We don't just treat pain; we treat people with pain.*

Why Adopt the Biopsychosocial Approach?

• Multiple organizations support biopsychosocial and multimodal pain management (WHO, IASP, EFIC, CDC, VA/DoD, ACP, APTA/AOPT, APA, NICE, etc.).
• Despite wide endorsement, implementation lags due to entrenched biomedical views, reimbursement models, and lack of training.

Pain as Perception: Why the Brain is the Boss

Pain is an output produced by the nervous system when it concludes the body is in danger; it is not a direct measure of tissue damage.

• Perception differs from reality: our brains fill in gaps based on context and expectations (for example, the famous optical color illusion of "the dress").
• Sound and vision examples show how ambiguous stimuli can be interpreted differently. Pain is no different.

Signal vs. Noise: Making Sense of the Story

Listening is a therapeutic intervention. Allow patients to tell their story without interruption; often one minute of uninterrupted listening yields valuable information.

• Identify "flags": psychosocial factors (yellow flags), serious pathology (red flags), and positive factors that support recovery.
• Common unhelpful beliefs include catastrophic statements ("my back is shot", "my discs slipped") that increase fear and avoidance.
• Ask open questions:
• What is important to you?
• What do you think is causing the pain?
• What have you been told?
• What are you worried about?
• How do you think you can get better?
• What barriers do you see?
• Translate patient goals into concrete activities (e.g., "pick up my grandchild" instead of just "feel better").

Pain Phenotypes

• Nociceptive: Pain proportional to tissue load or inflammation; localised and anatomically plausible. Descriptors: dull, aching, throbbing, sharp with movement. Aggravated by movement, load or posture; relieved by rest or NSAIDs. Clues: swelling, stiffness and a mechanical/inflammatory story.
• Neuropathic: Pain resulting from nerve damage. Pattern follows a dermatome or peripheral nerve. Descriptors: burning, electric, shooting, stabbing, numbness. May be spontaneous or triggered by light touch or temperature. Relievers include neuropathic agents. Clues: numb patches, pins and needles, weakness.
• Nociplastic: Pain from altered central processing without clear tissue or nerve lesion. Pattern is migratory, bilateral or widespread. Descriptors: diffuse pressure-like pain that fluctuates. Aggravators include stress, poor sleep and exertion; pacing and hygiene may help. Clues include fatigue, overlapping conditions (irritable bowel syndrome, temporomandibular joint disorder) and sensory hypersensitivity.

Case examples:
• Bill: 42-year-old with multi-site pain (shoulder, knees, hips, low back, neck) and persistent headaches. Poor sleep and symptoms that come and go; told it is "all in my head." This suggests a nociplastic/central sensitization pattern.
• Sheila: 60-year-old with sharp, sometimes throbbing knee pain worsened by walking and standing. Improved with rest, ice and NSAIDs; occasional giving way. Fits a nociceptive pattern (osteoarthritis).
• Doug: 68-year-old who developed a painful rash along the right T7 dermatome; pain persisted after the rash healed. Wearing a shirt is intolerable. This reflects neuropathic pain (post-herpetic neuralgia).
• Mixed case: A 55-year-old with sharp groin pain on load bearing/hip flexion (nociceptive) and burning/tingling in the buttock and leg (neuropathic) suggests both nociceptive and neuropathic contributions. Mixed phenotypes are common.

Signal vs. Noise: Making Sense of the Exam

• The physical exam serves to rule out serious pathology, narrow the differential diagnosis, validate patient concerns and build a therapeutic alliance.
• Always ask permission and explain ("sign-post") what you are about to do; be sensitive to trauma and PTSD histories.
• Prioritize tests that assess strength, sensation and reflexes; include pathological reflexes (Hoffman, Tromner, Babinski, clonus).
• Use adequate resistance; use gravity to test plantar flexion; get a good reflex hammer; repeat pathological reflexes to become familiar with normal responses.
• Provocative tests are useful when chosen judiciously. More tests increase false positives. Use validated test clusters (e.g., Laslett's SIJ, Wainner's cervical radiculopathy, Cook's cervical myelopathy).
• Phenotype the pain during the exam: Is it nociceptive (well-localized, sharp/achy), neuropathic (burning, radiating, paresthesias) or nociplastic (diffuse/multi-site)?

Communication and Words that Heal (or Harm)

• Communication shapes a patient's trajectory. Words can heal or harm; messages that instill fear, hopelessness or despair silence further discussion.
• Barriers such as time pressure, bias and medical jargon can hinder effective communication. Consider the patient's emotional state, literacy and previous experiences.
• Reflect on examples of harmful statements from healthcare providers (e.g., "Your father's head is falling off", "It's all in your head") and strive to replace them with validating, empathetic messages.
• Use the V-E-M-A model:
• Validation: acknowledge the patient's experience.
• Education: explain mechanisms and treatment options in understandable terms.
• Motivation: energize behavior toward a goal.
• Activation: help patients take action.
• Encourage questions and shared decision-making; patients are more likely to adhere to a plan they helped create.

Manual Therapy Reframed

• Manual therapies often reduce pain but not through "realigning" bones. Structural narratives (e.g., correcting vertebral alignment) lack evidence and may increase fear and dependency.
• Modern understanding emphasizes neurophysiological mechanisms: manual contact can influence autonomic function, neurovascular responses and neuromodulation, altering pain perception.
• Research shows facet joints gap temporarily during manipulations but return to their original position; no lasting alignment change occurs (Cramer et al., 2013; Young et al., 2024; Langenfeld et al., 2025). Radiographic features do not predict who improves (Maiers et al., 2025).
• Think of manual therapy as creating a "window of opportunity" to engage in active strategies and education. Pair it with graded activity to improve resilience and confidence.

Treatment Planning

A structured treatment plan integrates assessment findings with patient goals and evidence. Key elements include:

• Red flags: Identify and rule out serious pathologies (e.g., bowel/bladder changes, progressive weakness, weight loss).
• Global diagnostic impression: Summarize the primary pain mechanism/phenotype and the most likely pathology.
• Yellow flags: Psychosocial factors such as fear, catastrophizing, low self-efficacy and poor social support that may hinder recovery.
• Supporting information: Relevant medical history, imaging or lab findings.
• Barriers and strengths: Consider patient-specific obstacles (e.g., sleep disturbance, job stress) and strengths (e.g., motivation, support network).
• Goals: Collaboratively set meaningful, specific goals (e.g., "return to work", "play soccer with children").
• Insight: Note the patient's beliefs and expectations to guide education and expectation management.

Case Example: Nate

Nate is a 40-year-old man referred for low back and left lower-extremity pain. There are no red flags. Symptoms and exam findings (radiating pain to the lateral leg and foot, reduced sensation in the L5 dermatome, mild weakness of dorsiflexion and extensor hallucis longus) suggest an L5 radiculopathy with a neuropathic phenotype. Reflexes are normal and there are no pathological reflexes.

• Barriers: Pain-related fear and avoidance, concern about making the injury

permanent; sleeping only 4-5 hours per night.
• Strengths: Wants to return to work and play soccer with his kids; extension-biased positions alleviate pain, suggesting modifiable symptoms.
• Beliefs/insight: Worries about a "slipped disc" crushing a nerve and thinks surgery may be necessary; doubts conservative care but is open to learning.
• Plan: Education about radiculopathy and healing, reassurance regarding disc resorption, graded extension-based exercises, sleep optimization and fear-avoidance reduction.

Three Pillars of Treatment Planning

• Best evidence: Use up-to-date research to guide interventions. Consider both statistical and clinical significance and whether the findings are generalizable to your patient.
• Personal expertise: Draw on clinical experience and knowledge of local resources, recognizing where evidence is lacking and relying on clinical judgement.
• Patient preference: Incorporate patient goals, values and constraints. Treatments are more effective when patients participate in decision-making and choose strategies they believe in.

Case Studies in Treatment Planning

Case 1: 36-year-old woman with fibromyalgia

• Evidence: Cognitive behavioral therapy, graded exercise, manual therapies, acupuncture and duloxetine show benefits.
• Personal experience: Passive treatments alone are often ineffective; combine them with education and active strategies.
• Patient preference: Does not want medications and prefers acupuncture; past rehabilitation exercise experiences were poor.

Respect her preferences (acupuncture) while encouraging active engagement (CBT).

Case 2: 40-year-old man with right L5 radiculopathy, stable weakness for three weeks, sleep disturbance and job insecurity

• Evidence: Most acute radiculopathies improve; discs often resorb. Rehabilitative approaches and education are recommended; manual therapy and epidural steroid injection may provide short-term relief. Expectation management about return to work is essential.
• Personal experience: Poorly managed acute pain may lead to central sensitization, especially when sleep is impacted. Early education and sleep management are important.
• Patient preference: Desires immediate intervention but prefers to avoid surgery. He is open to medications, interventional procedures, and manual therapies.

Coordinate with PCP or Pain provider re: medication or ESI, offer manual therapies, and educate re: importance of sleep and favorable natural history of radiculopathies.

Conclusion

The biopsychosocial approach emphasizes treating people, not just pain. Understanding pain mechanisms, listening to stories, examining thoughtfully, communicating clearly and reframing interventions can transform patient care. Use evidence, clinical judgment, and patient values to develop collaborative treatment plans that support recovery and resilience.